



2011 Toxics Release Inventory (TRI) National Analysis

Briefing Slides

1/16/2013



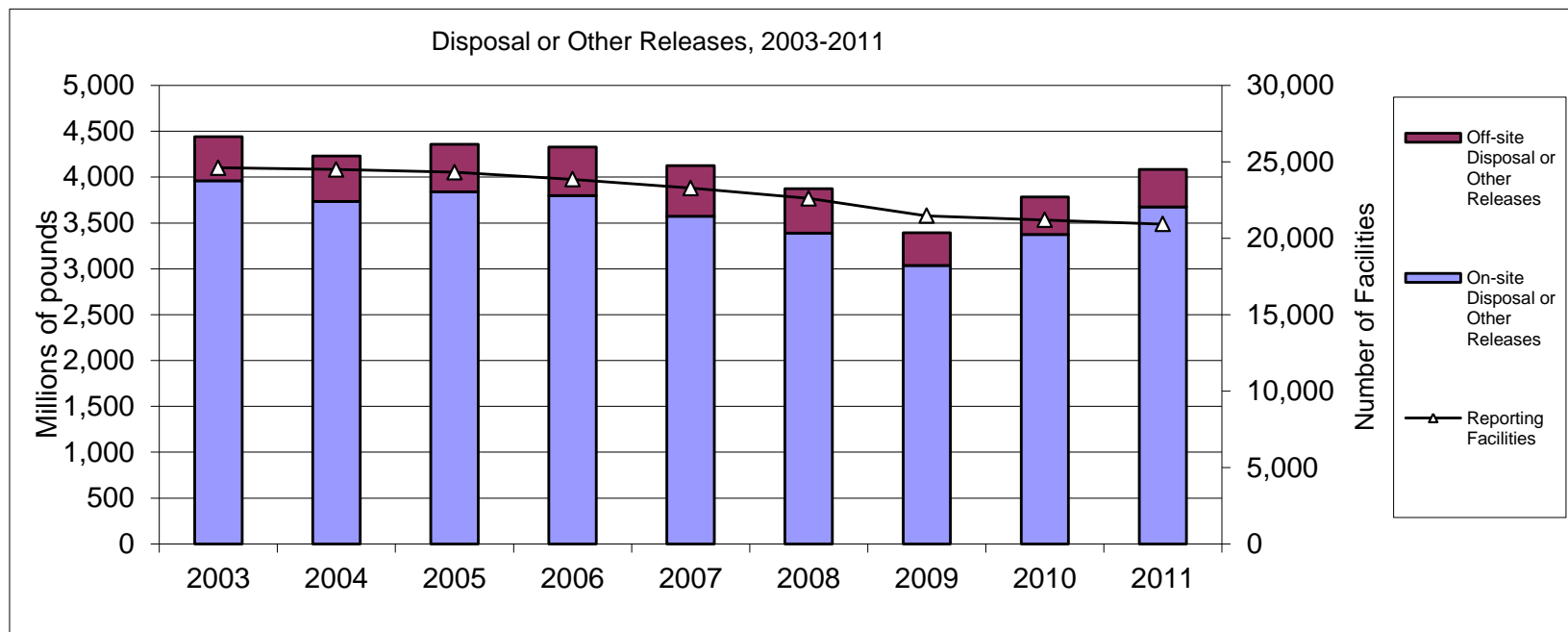
Key Messages

- Continuing a trend from last year, total disposal or other releases increased overall from 2010-2011
 - Mainly due to increases in land disposal from metal mines, but other industries also saw smaller increases
 - Some industries saw decreases including electric utilities and chemical manufacturers
 - Lead increased from 2010-2011 mainly due to an increase in land disposal from metal mines
- Importantly, total disposal or other releases to air decreased, continuing a long-term trend
 - Mainly due to decreases in acid gas releases from electric utilities
 - We also saw decreases in mercury air releases from electric utilities
- This year the National Analysis highlights more analyses featuring pollution prevention activities at TRI facilities
- EPA now collects information on greenhouse gases under the Clean Air Act through the Greenhouse Gas Reporting Program



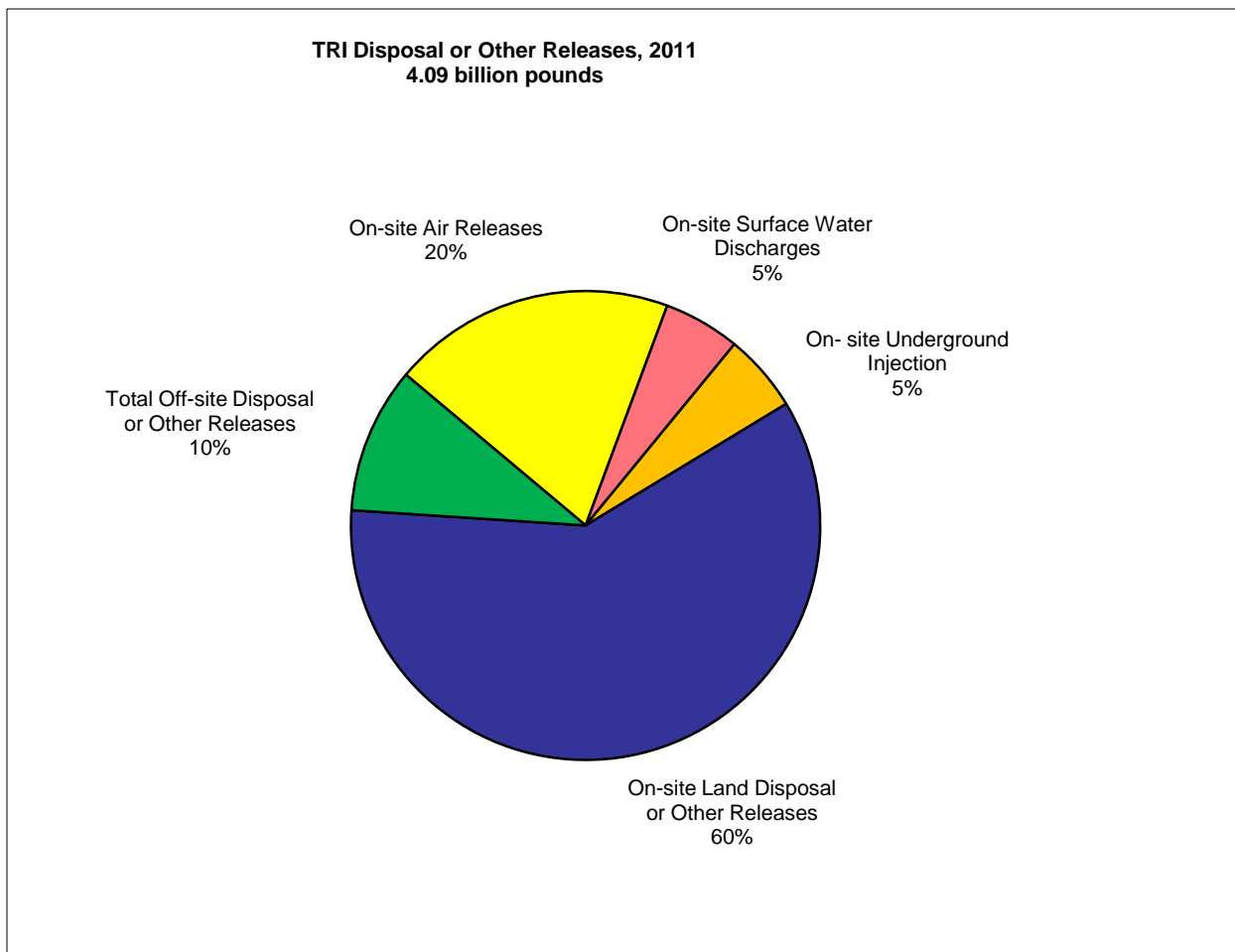
Key Messages

- From 2010-2011 disposal or other releases increased by 8% (300 million lbs)
 - Continues upward trend from last year
 - Total for 2011 near total for 2007
 - Metal mining large increase (28%) for second year
- Facilities reporting to TRI down by 1%





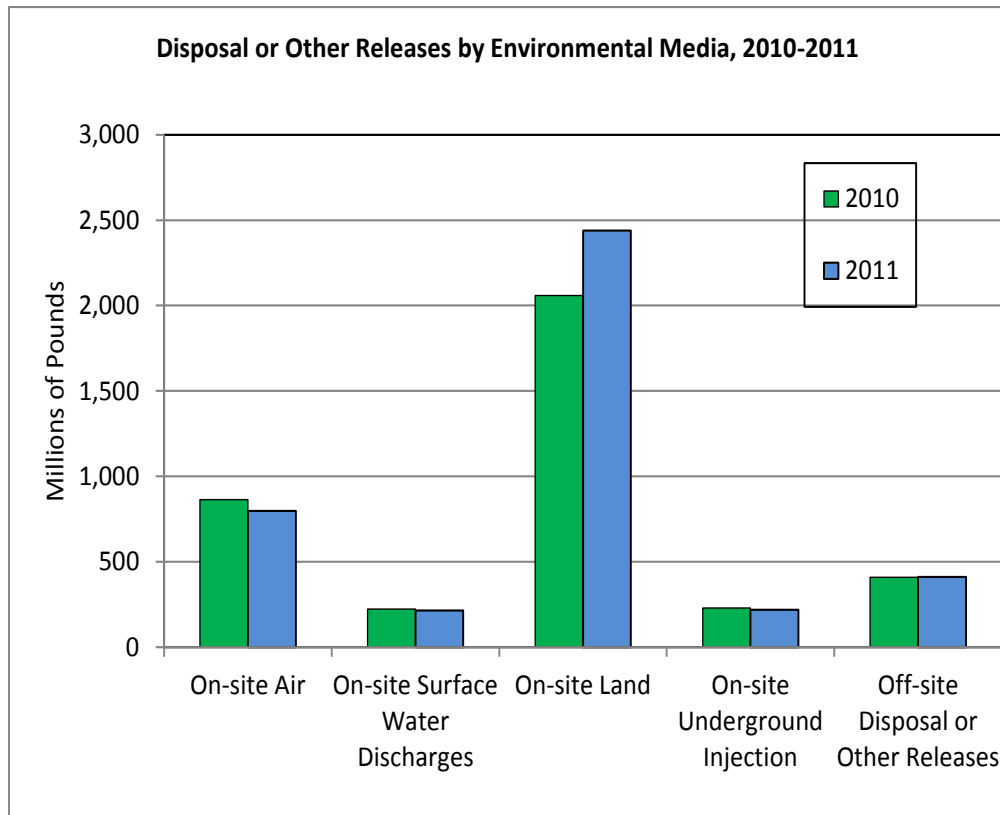
Releases by Environmental Media





Releases by Environmental Media

- Total on-site disposal or other releases up 9%
 - Air releases down 8% (about 66 million lbs)
 - Surface water discharge down 3% (about 7 million lbs)
 - Land up 19% (about 382 million lbs)
 - Underground injection down 4% (about 9 million lbs)
- Total off-site disposal or other releases up 0.3% (about 1 million lbs)

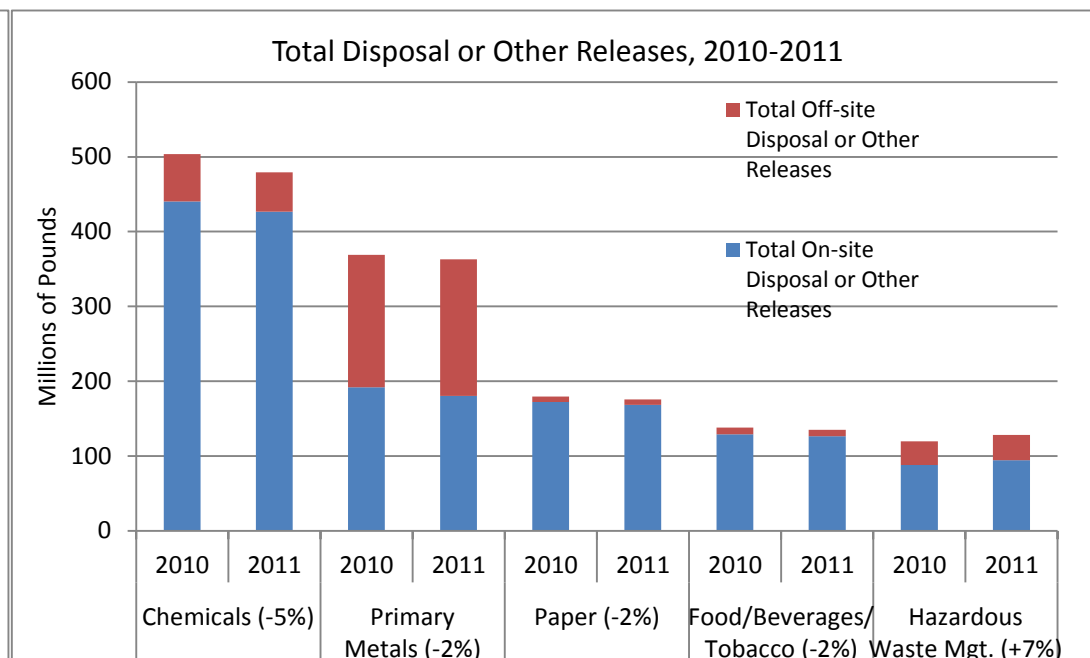
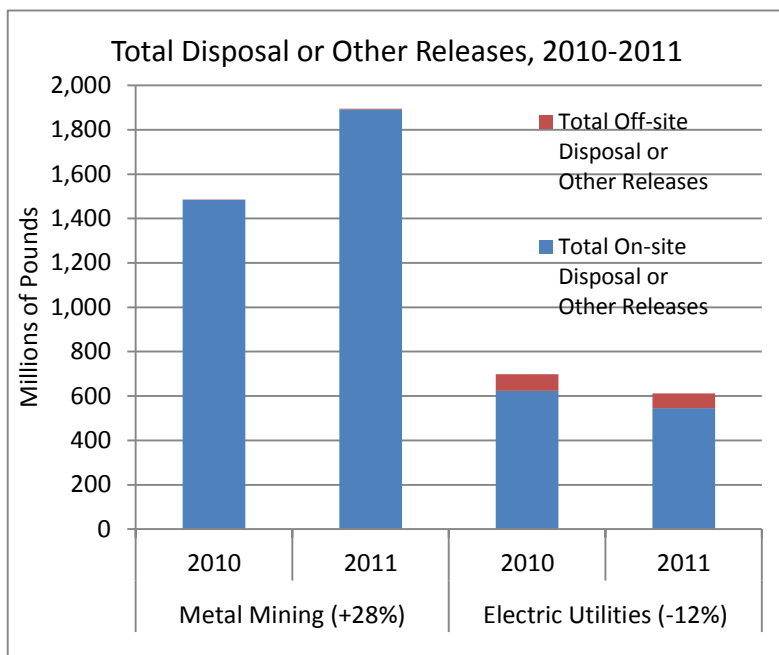




Industry Sectors

Change in total disposal or other releases, 2010-2011, for sectors with largest total releases

- Metal mines increased 409 million lbs (28%)
- Electric utilities decreased 87 million lbs (12%)
- Hazardous waste management increased 8 million lbs (7%)
- Chemicals decreased 24 million lbs (3%)
- Primary metals decreased 6 million lbs (2%)
- Paper decreased 4 million lbs (2%)
- Food/beverages decreased 3 million lbs (2%)





Facilities with Largest Increases

- Facilities with largest increase in disposal or other releases (top four were metal mines)
 - Red Dog Operations, Kotzebue, AK
 - +212 million lbs
 - Reasons: increase in waste rock production and waste rock disposal
 - Newmont Mining Corp. Carlin South Area, Carlin, NV
 - +90 million lbs
 - Reasons: Increase of waste rock production and change of chemical concentration in waste rock
 - Bald Mountain Mine, Elko, NV
 - +85 million lbs
 - Reasons: Arsenic compounds in waste rock was greater than *de minimis* in RY2011, but not in RY2010, resulting in new chemical reporting and greater reported land disposal quantities
 - Coeur Rochester Inc., Lovelock, NV
 - +34 million lbs
 - Reasons: Facility resumed mining in 2011



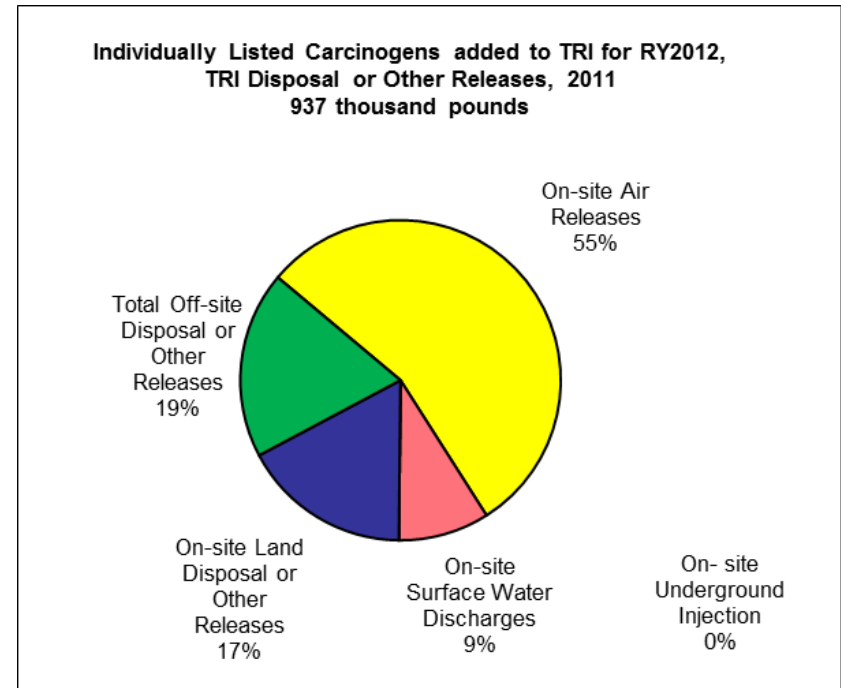
Facilities with Largest Decreases

- Facilities with largest decreases in disposal or other releases (two metal mines, one electric utility)
 - Two Newmont Mining Corp facilities in NV
 - Together had decrease of 96 million lbs
 - Reasons: Production of waste rock decreased and change of chemical concentrations in waste rock
 - Keystone Power Plant, Shelocta, PA
 - decrease of 5.6 million lbs
 - Reasons: change in process at facility and change in estimation methods



Carcinogens added to TRI for RY2011

- For Reporting Year 2011
 - 12 Carcinogens added to TRI list
 - Total disposal or other releases for 2011: 937,271 pounds
 - 74 facilities reported
 - Chemical manufacturing makes up 83% of these releases, plastics and rubber 12%
 - On-site air releases 55% of total*
 - 4 Carcinogens added to Polycyclic Aromatic Compounds (PACs) category

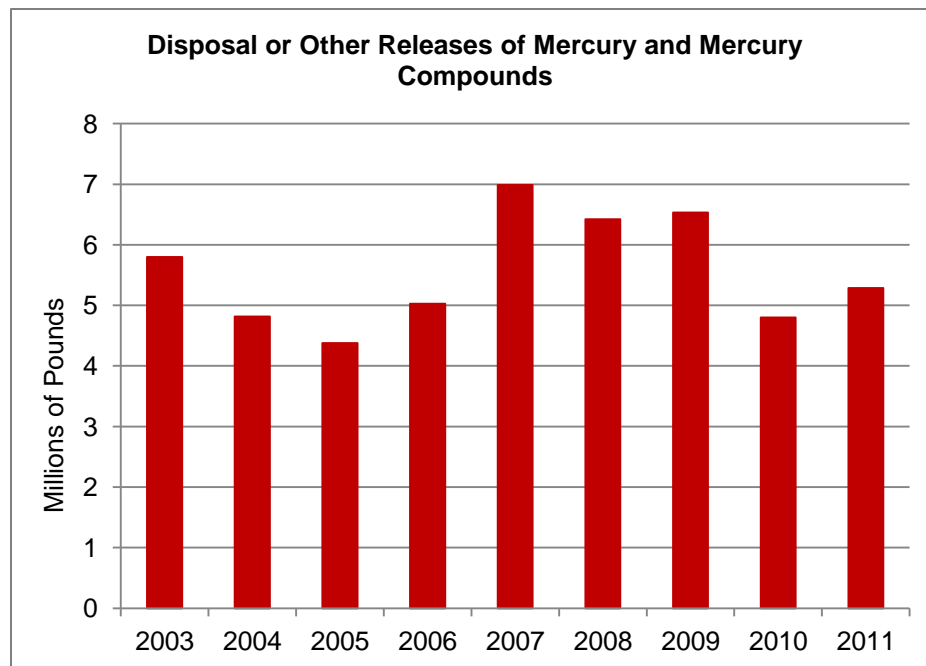
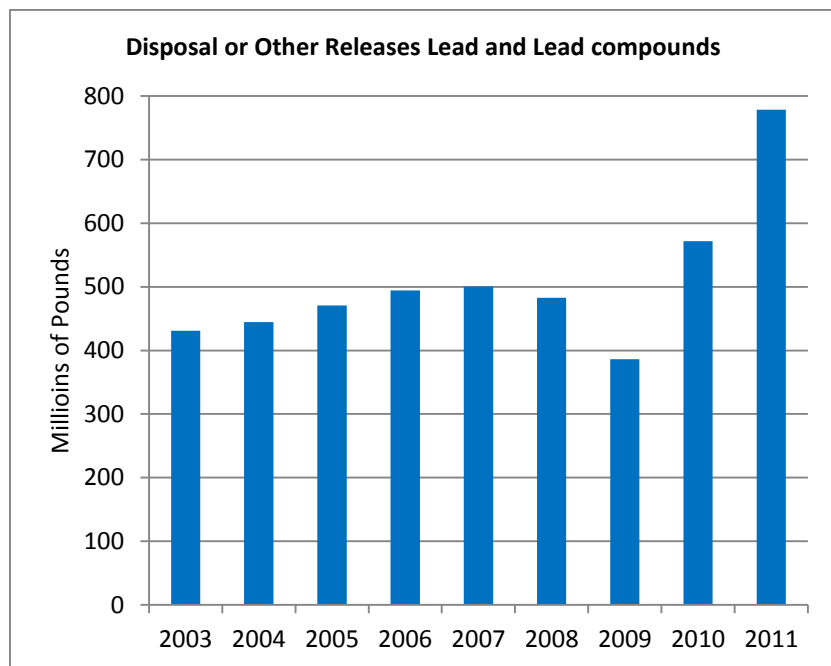


* Note that air releases of these chemicals were a much higher percentage of total releases than for all chemicals in the chemical manufacturing sector (where air releases were 30% of total releases of all chemicals) and a much lower percentage in the plastics and rubber manufacturing sector (where air releases were 81% of total releases of all chemicals).



Releases of Persistent Bioaccumulative and Toxic chemicals (PBTs)

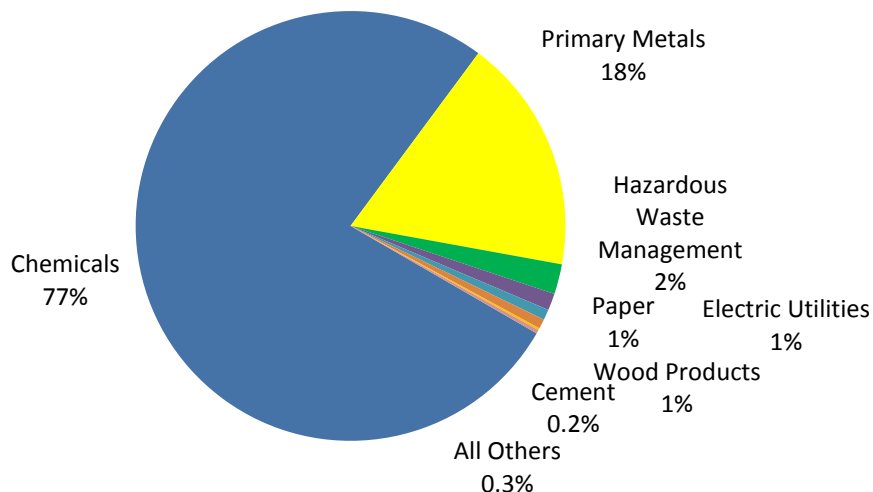
- Lead and lead compounds increased 36% from 2010-2011 mostly mining land disposal but decrease in air releases of 4%
- Mercury and mercury compounds up 10%, but air releases decreased 10%



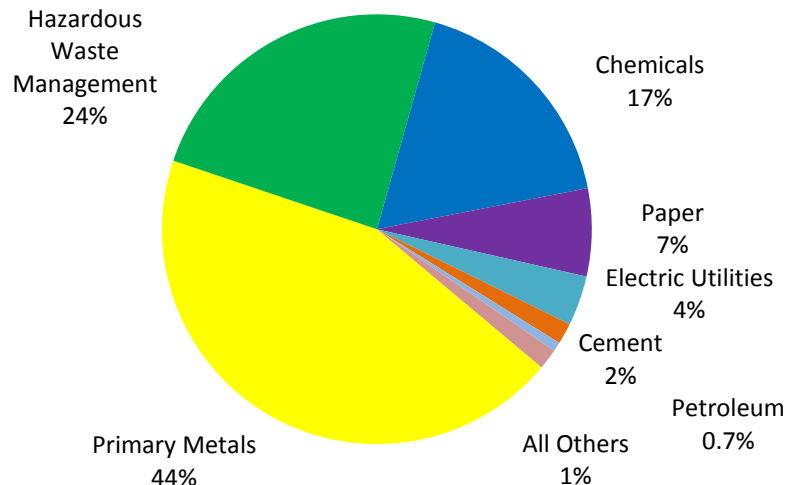


Releases of Persistent Bioaccumulative and Toxic chemicals (PBTs)

Grams
Percent of Total Disposal or Other Releases,
Dioxin and Dioxin-like Compounds, 2011



Grams-TEQ
Percent of Total Disposal or Other Releases,
Dioxin and Dioxin-like Compounds, 2011



- Releases of Dioxin and Dioxin-like compounds
 - Total disposal or other releases about 54,579 grams for 2011
 - Total increased 35% (about 14,224) grams from 2010
 - Air releases decreased 1% (about 11 grams) from 2010
 - Difference between dioxin grams and dioxin TEQs by sector

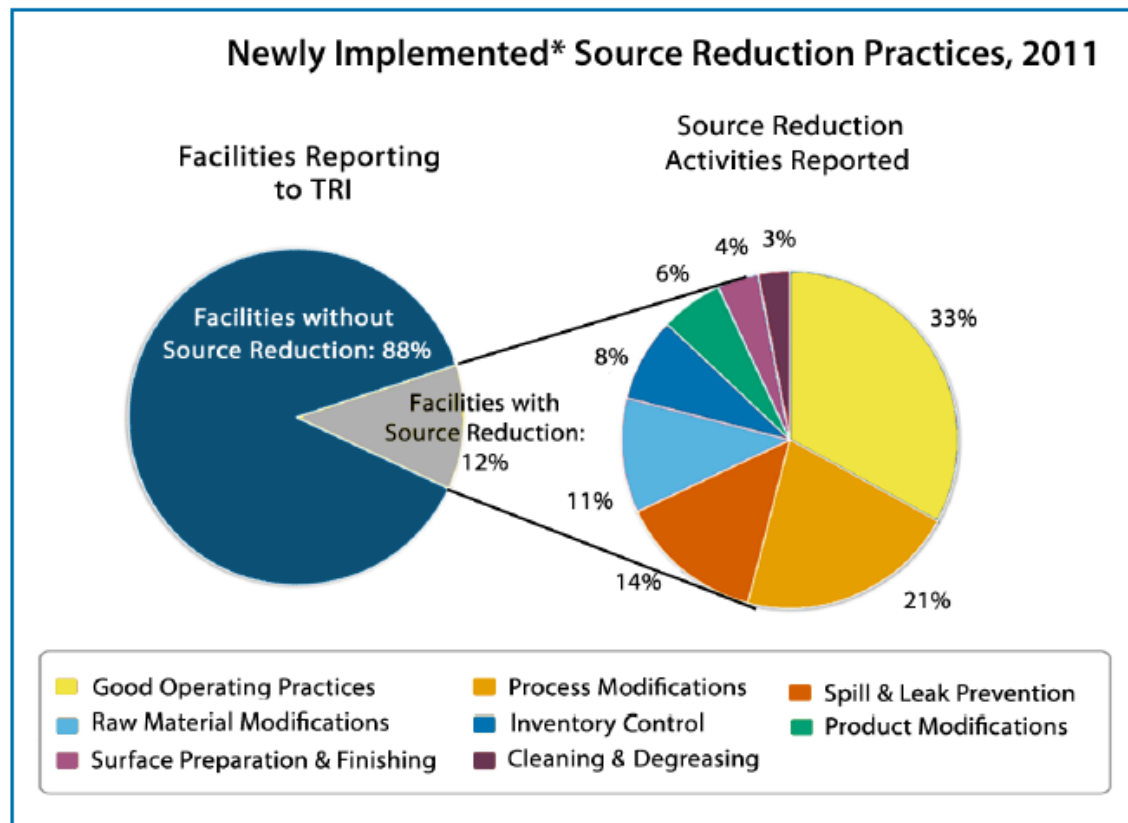


Economic Analysis

- Comparing releases to production measures for 2003-2011 (see appendices for more information)
 - Manufacturing sector
 - Releases decreased 26%, and production decreased 4% since 2003
 - Analysis suggests factors other than production played a big role in decreasing TRI releases
 - Metal mining sector
 - Releases increased 52%, but production decreased 3% since 2003
 - Analysis suggests factors other than production played a big role in increasing TRI releases (changes in composition of ore and waste rock)
 - Electric utilities sector
 - Releases decreased 43%, and production decreased 16% since 2003
 - Analysis suggests that until 2008 factors other than the economy played a big role in reducing TRI releases, and since 2008 production is playing a bigger role
 - Electricity production at commercial power plants in the US has increased from 2003-2011, but has decreased at TRI facilities partially due to a movement from coal to other fuels.

Pollution Prevention

- Examples of pollution prevention in the National Analysis
 - Source reduction activities by category, chemical, industry
 - Method facilities used to identify source reduction activity
 - Anecdotal information from section 8.11 of TRI's Form R

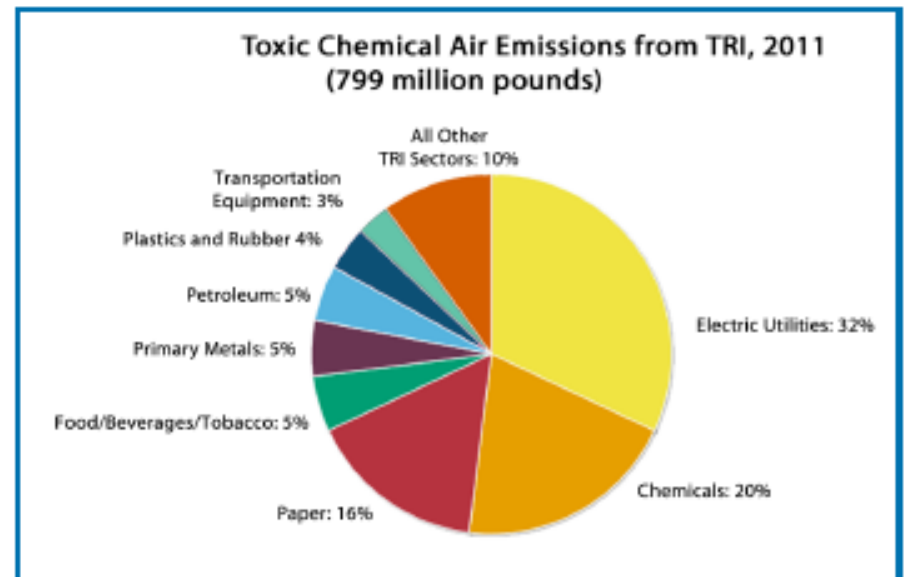
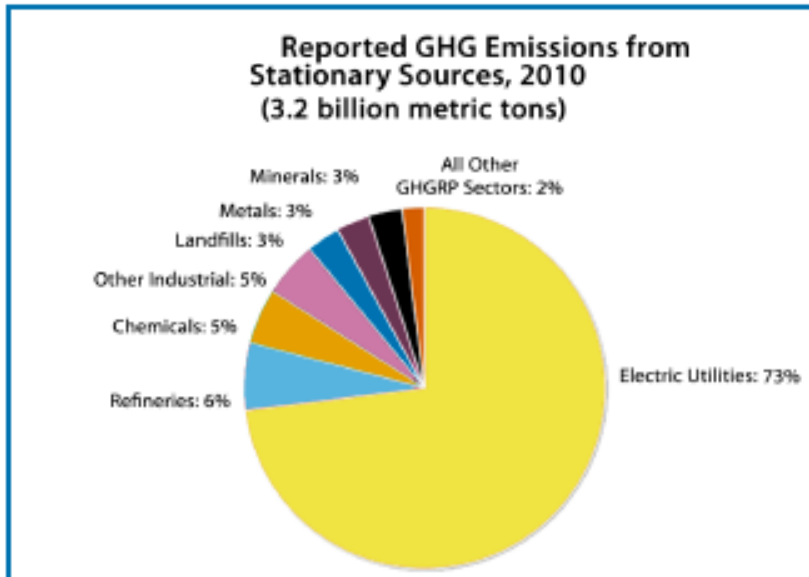


* Facilities may have ongoing source reduction activities initiated in previous years that are not captured in the graphs in this document. To find data on previously implemented source reduction activities see the TRI Pollution Prevention Website (www.epa.gov/tri/p2).



Greenhouse Gas Reporting Program

- EPA collects information on emissions of greenhouse gases (GHGs) under the Clean Air Act
 - Includes information from electric utilities, refineries, chemical manufacturers and other sectors
 - Can complement TRI data to give a more complete picture of emissions
 - Analysis comparing top TRI industries to the top GHG emitting industries





Contact Information

For questions about the TRI National Analysis or TRI
in general e-mail tri.help@epa.gov

or

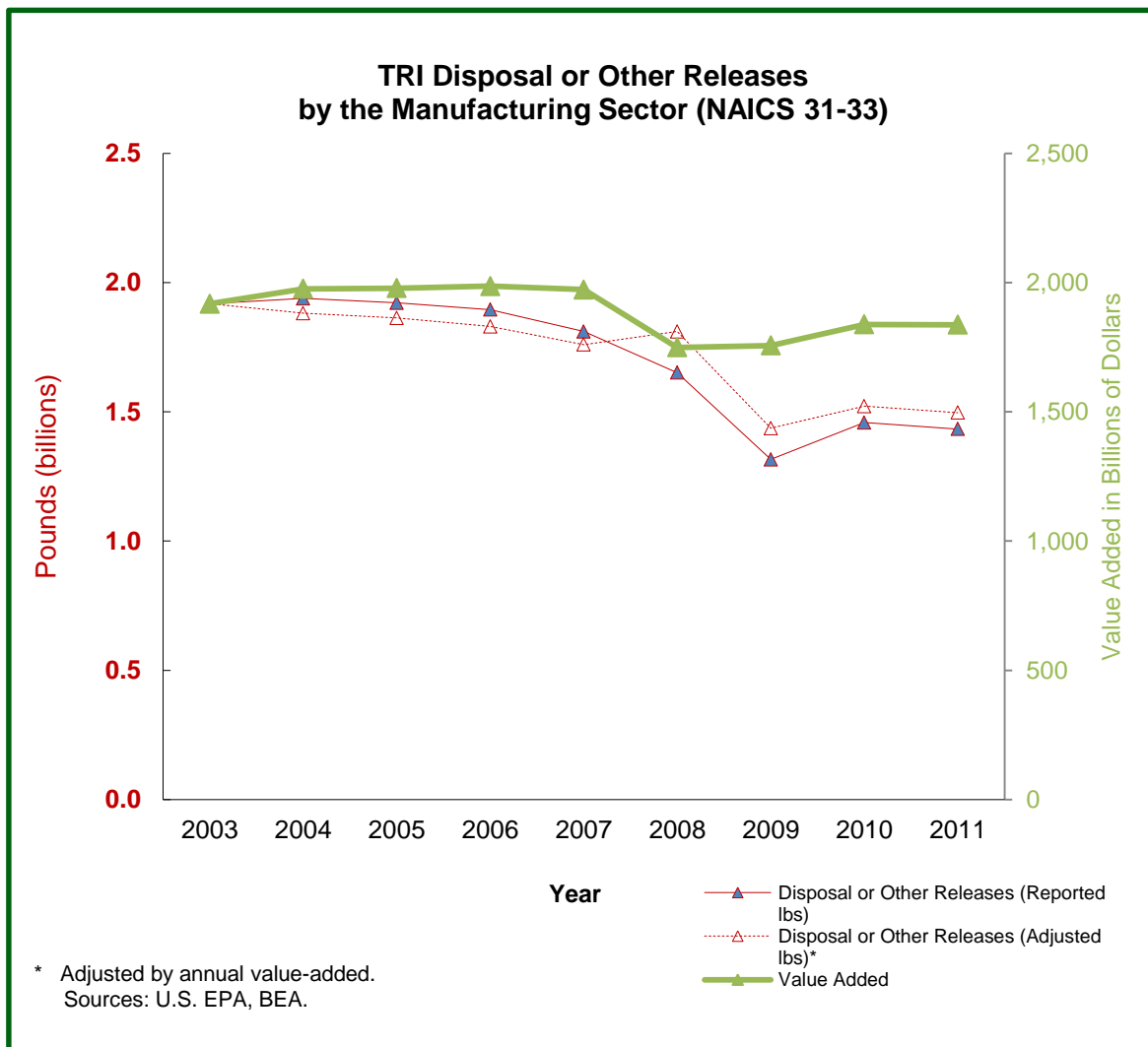
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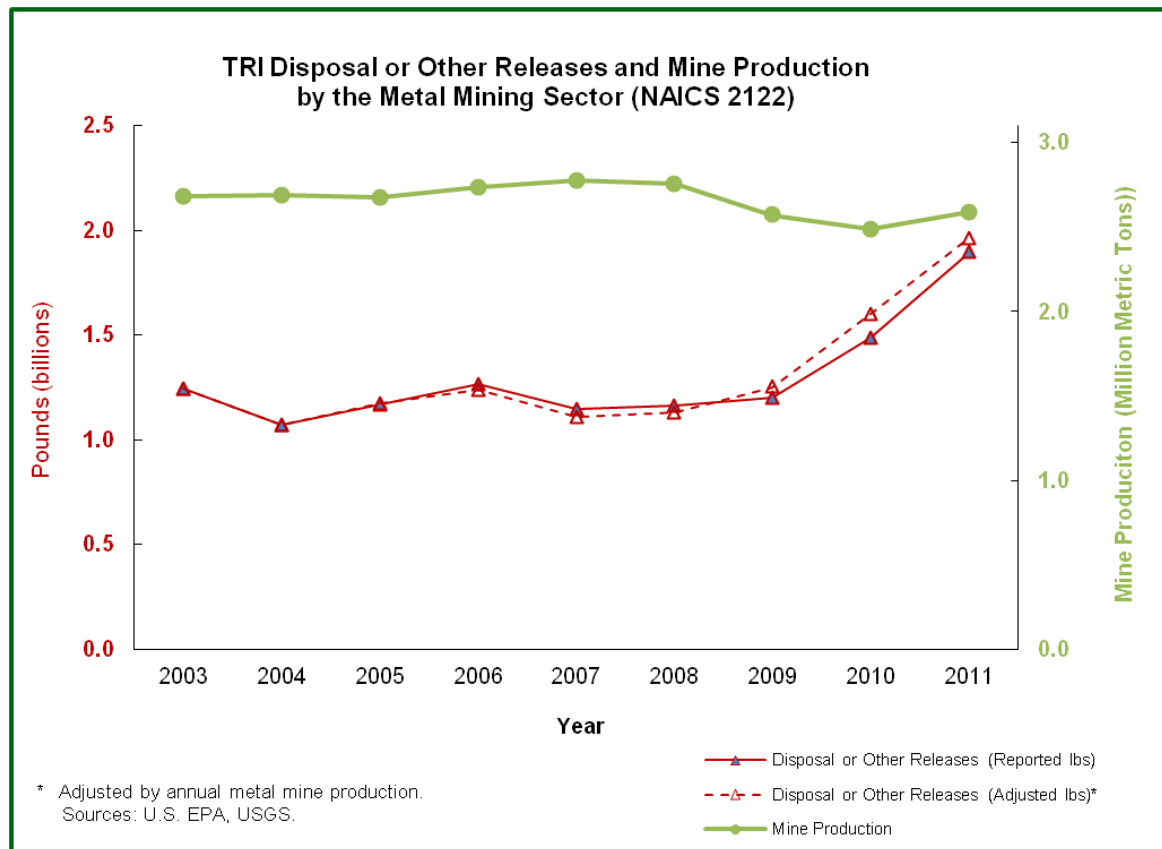
Appendix 1: Manufacturing Production

- Economic analysis:
Manufacturing

- Disposal or other releases decreased 26% since 2003
- Value added, an estimate of production, decreased 4% since 2003
- Releases have decreased more than production has decreased
- Dotted line is disposal or other releases normalized to value added
 - Small difference between normalized and observed releases suggests factors other than the economy played a big role in reducing TRI releases
- Other factors: a reduction in chemical use; a shift to other management methods, such as recycling and treatment of chemicals; a gradual decrease in the number of facilities reporting to TRI; a change in the composition of raw materials used



- Economic analysis:
Metal Mining
 - Disposal or other releases increased 52% since 2003
 - Mine production, an estimate of production, decreased 3% overall since 2003 but increased 4% from 2010-2011
 - Dotted line is disposal or other releases normalized to mine production
 - Small difference between normalized and observed releases suggests factors other than the economy played a big role in increased TRI releases





Appendix 3: Electric Utilities Production

- Economic analysis:
Electric Utilities
 - Disposal or other releases decreased 43% since 2003
 - Net generation, an estimate of production, decreased 16% since 2003
 - Dotted line is disposal or other releases normalized to net generation
 - Small difference between normalized and observed releases suggests factors other than the economy play a big role in reducing TRI releases until 2008.
 - Indicates fewer releases per kwh after 2008

